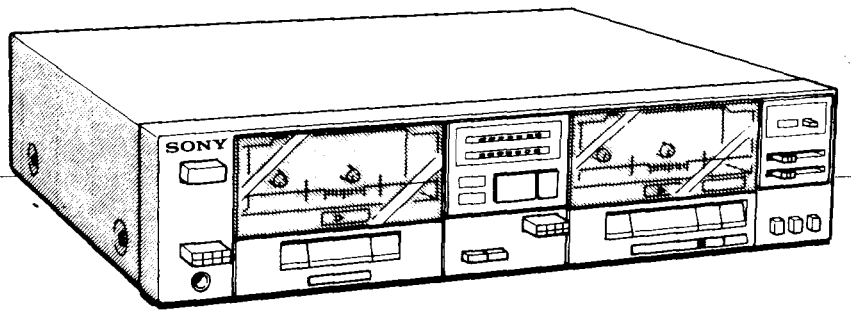
SONY®

STEREO CASSETTE DECK

TC-W5

OPERATING INSTRUCTIONS

Before operating the unit, please read this manual thoroughly.
This manual should be retained for future reference.



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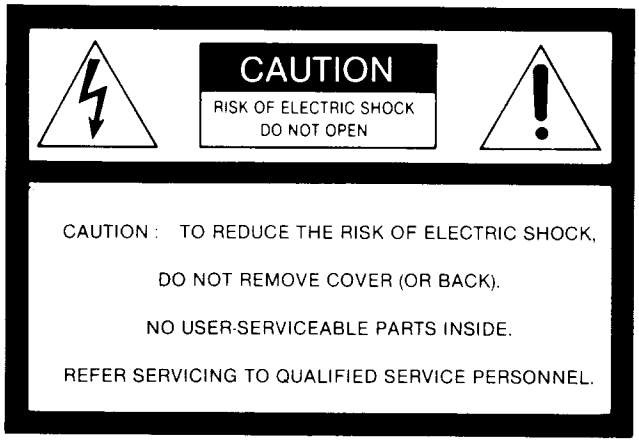
OWNER'S RECORD

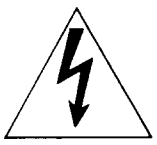
The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. TC-W5 Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

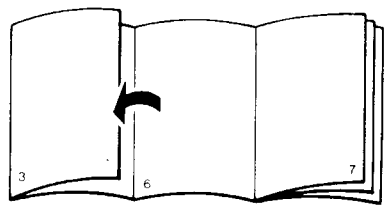

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

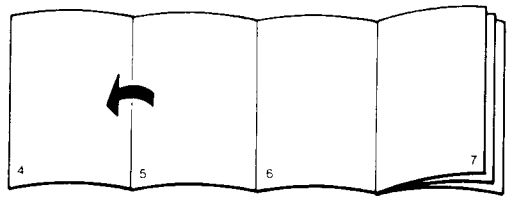


This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

As you read, fold back this page and refer to the illustrations on pages 3 and 4.





TAPE LIST

Tape type	Tapes (C46-C90)
TYPE I (NORMAL)	SONY: HF, HF-S, HF-ES (120 μs, NORMAL BIAS)
TYPE II (CrO_2)	SONY: UCX, UCX-S (70 μs, HIGH BIAS)
TYPE IV (METAL)	SONY: METAL-ES (70 μs, METAL BIAS)

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

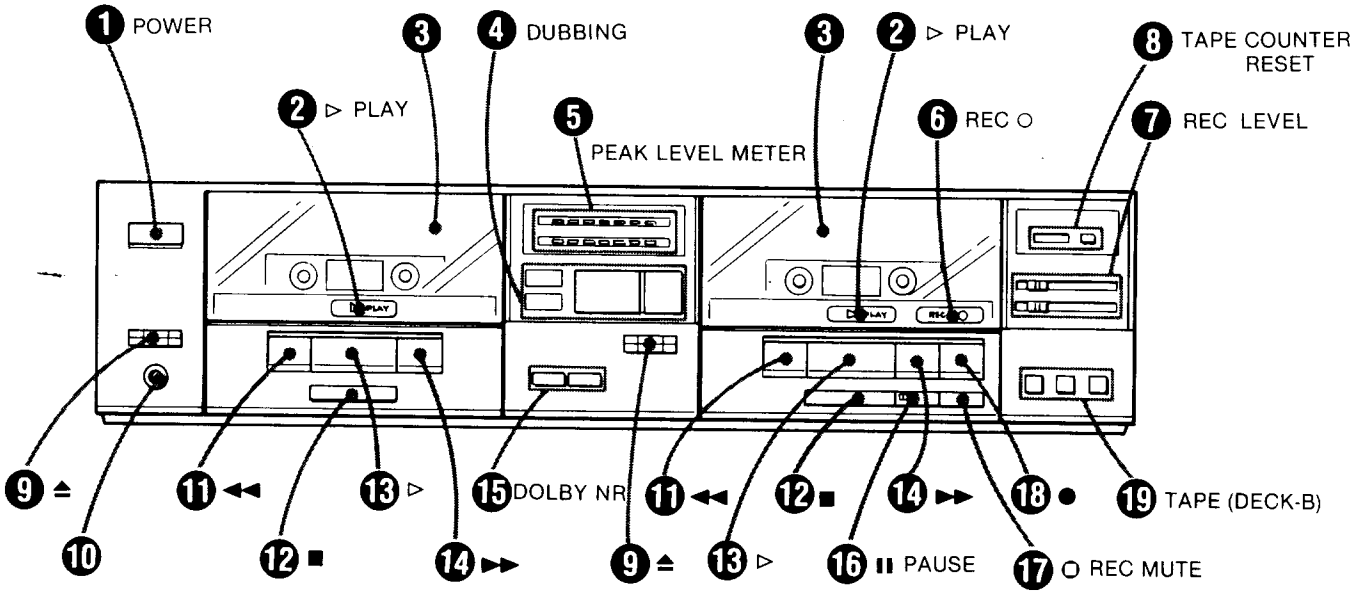
Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

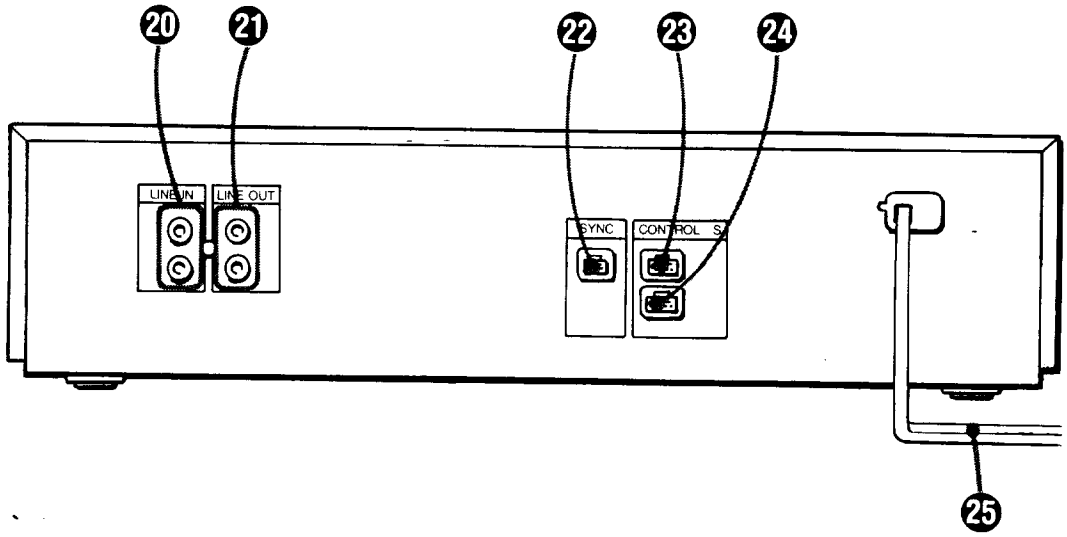
"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

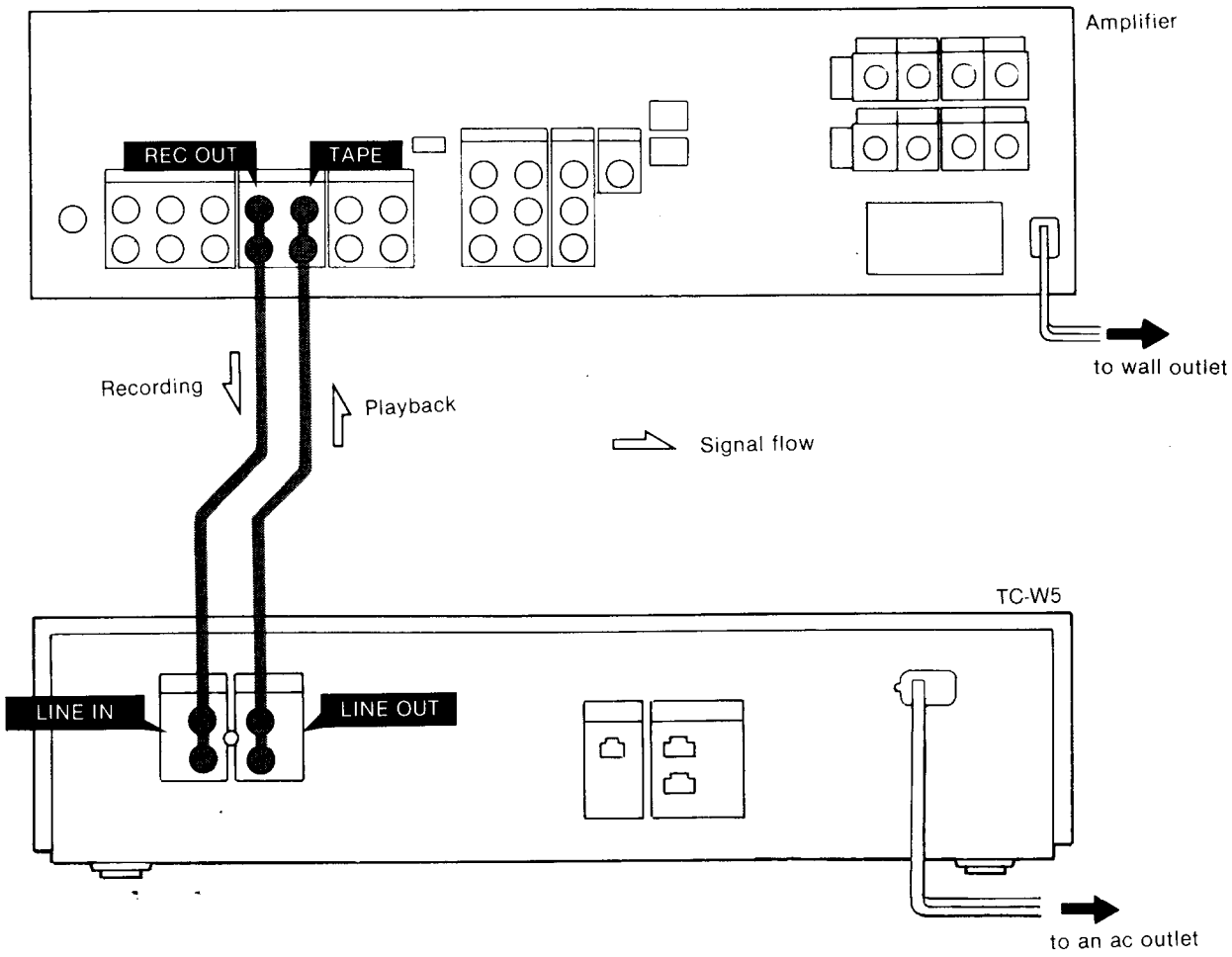
A


1 POWER
3
4 DUBBING
3
2 ▷ PLAY
8 TAPE COUNTER RESET
2 ▷ PLAY
5 PEAK LEVEL METER
6 REC ○
7 REC LEVEL
9 ≙
11 ◀◀
13 ▷
15 DOLBY NR
11 ◀◀
12 ■
14 ▶▶
18 ●
19 TAPE (DECK-B)
10
12 ■
14 ▶▶
9 ≙
13 ▷
16 ❚❚ PAUSE
17 ○ REC MUTE

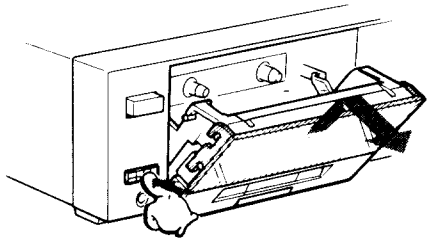
B


20
21
22
23
24
LINE IN
LINE OUT
SYNC
CONTROL S
25

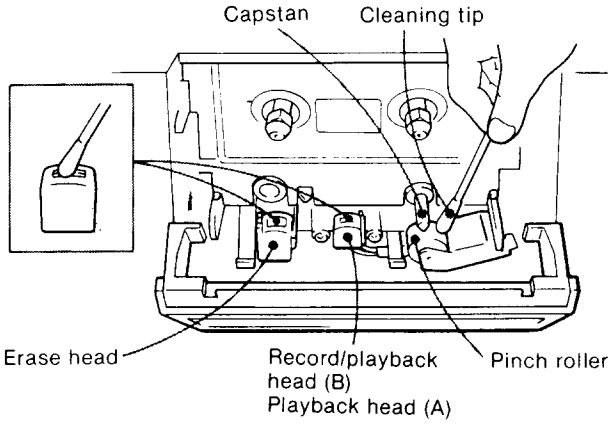
C


Amplifier
REC OUT
TAPE
to wall outlet
Recording
Playback
Signal flow
TC-W5
LINE IN
LINE OUT
to an ac outlet

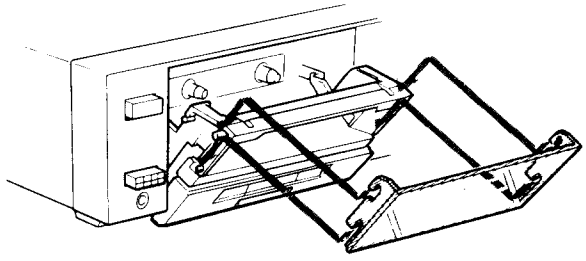
D



E


Capstan
Cleaning tip
Erase head
Record/playback head (B)
Playback head (A)
Pinch roller

F



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PRECAUTIONS

On safety

- Operate the unit on 120 V ac.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- The unit is not disconnected from the ac power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

On installation

- Good air circulation is essential to prevent internal heat build-up in the unit. Place the unit in a location with sufficient air circulation.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust or mechanical vibration.
- Install the unit with the front panel facing toward you. Do not install the unit in an inclined position.

On head cleaning

The heads and tape path should be cleaned after 10 hours of operation.
Dirty heads and a dirty tape path cause:

- Loss of high frequency response
- Loss of sound volume
- Sound drop-outs

On operation

Because of the safety mechanism, the function buttons will not operate if the cassette holder is not closed completely and if there is no cassette or if a cassette has been incorrectly inserted into the cassette holder.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

FUNCTION OF CONTROLS

Each number in the text is keyed to that of the illustrations on pages 3 and 4.

Front panel (Fig. A)

❶ POWER switch

❷ ▷ PLAY indicator

❸ Cassette holder

❹ DUBBING buttons and indicators
Press these buttons to dub from deck A to deck B.
NORMAL SPEED: Press for normal speed dubbing. The DUBBING indicator lights.
HIGH SPEED: Press for high speed dubbing. The DUBBING and HIGH SPEED indicators light.

❺ PEAK LEVEL METERs
These meters show the peak input level of each channel during recording, and recorded levels in the playback mode.
When both deck A and B are activated, the meters show the level of deck B.

❻ REC ○ indicator

❼ REC LEVEL (recording level) controls
These controls adjust the recording level.

❽ TAPE COUNTER and RESET button
The tape counter provides a numerical reference point while recording which can be used to index a recorded cassette. To reset to zero, press the RESET button.

❾ ⏏ (eject) button
Press this button to open the cassette holder.

❿ HEADPHONES jack (stereo phone jack)

⓫ ◀◀ (rewind) button
Press this button to advance the tape rapidly to the left.

⓬ ■ (stop) button

⓭ ▷ (playback) button

⓮ ▶▶ (fast-forward) button
Press this button to advance the tape rapidly to the right.

⓯ DOLBY NR* switch
For recording or playback with Dolby B-type system, set the DOLBY NR switch to B. For recording or playback with Dolby C-type NR system, set it to C. For recording without Dolby NR system, set it to OFF.
The Dolby NR system built in this deck is commonly used for deck A and deck B.
When both decks A and B are activated, only the sound from deck B passes through the Dolby NR system.

* "Dolby" and the double-D symbol are trade marks of the Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

The Dolby NR system reduces tape hiss and improves the signal-to-noise ratio at low-level high-frequency signals.

⓰ PAUSE button and indicator

⓱ ○ REC MUTE (record muting) button
Press this button to eliminate unwanted material and to insert a blank space during recording.

⓲ ● (record) button

⓳ TAPE select buttons
Depress one of the TAPE select buttons, depending on which type of tape you use on deck B. The optimum bias current adjustment for recording and the optimum equalization adjustment for both recording and playback are set.

Rear panel (Fig. B)

⓴ LINE IN (line input) jacks (phono jack)
Accept tape outputs from an amplifier for tape recording.

㉑ LINE OUT (line output) jacks (phono jack)
Accept tape inputs from an amplifier for playing back a tape.

㉒ SYNC connector (3-pin)
For synchro recording with deck B, connect to the SYNC connector of the turntable system. For further details, refer to the instruction manual of the Sony turntable system.

㉓ CONTROL S IN connector
Connect to the CONTROL S OUT or R REMOTE OUT connector of an optional Sony system control tuner or receiver for remote control of the total audio system.

㉔ CONTROL S OUT connector
Connect to the CONTROL S IN or R REMOTE IN connector of other Sony audio equipment with the supplied flat 4-pin remote control cord for remote control of the total audio system.

㉕ AC power cord

CONNECTIONS

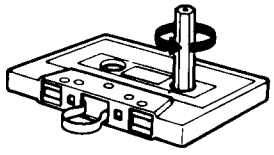
To hook up, see the connection diagram (Fig. C).

CONNECTION NOTES

- Turn the tape deck and amplifier off before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel connection and the white plug for left-channel connection.
- The cable connectors should be fully inserted into the connectors. A loose connection may cause hum and noise.

CASSETTE INSERTION

1 Press the ⏏ button to open the cassette holder.
2 Insert a cassette with the desired side, A or B, towards you. Before inserting a cassette, take up any slack in the tape to prevent it from becoming tangled around the capstan.



3 Close the cassette holder completely.

PLAYBACK

Either deck A or deck B can be used.

1 Depress the POWER switch to turn on the unit.
Note: The logic-controlled function buttons are not activated until 2 seconds after the unit is turned on, during which the indicator of the PAUSE button blinks.
2 Press the ⏏ button and insert a recorded cassette.
3 Tape type is automatically selected for deck A. For playback with deck B, depress the appropriate TAPE button. See the tape list on page 2.
4 Select the same Dolby NR system used in recording.
5 Set the input selector of the amplifier for tape monitor.
6 Press the ▷ button. Playback will begin.

At the end of the tape, the unit will automatically shut off.
To stop playback in the middle of the tape, press the ■ button.

RELAY PLAYBACK

1 Insert a recorded cassette into both deck A and deck B.
2 Press the ▷ button of either deck. Playback of that deck will start.

At the end of the tape, the unit will automatically shut off and playback of the other tape deck will begin.

AUTO PLAY

—To play from the beginning of the tape

To start rewinding the tape, while holding the ◀◀ button down, press the ▷ button.

After the tape is completely rewound, the tape will automatically replay.

RECORDING (deck B)

CAUTION

● The logic-controlled function buttons are not activated until 2 seconds after the unit is turned on.
Wait until the indicator of the PAUSE button goes off.
● When the cassette deck functions in recording mode, the erase head automatically erases any previously recorded material.

TO RECORD

1 Depress the POWER switch to turn on the unit.
2 Press the ⏏ button and insert a cassette.
3 Depress the appropriate TAPE select button. See the tape list on page 2.
4 Select the Dolby NR system.
5 Play the program source to be recorded.
6 Press the ● button.
7 Adjust the recording level.
See "Recording level adjustment".
8 While holding the ● button down, press the ▷ button.
Recording will begin.

At the end of the tape, the unit will automatically shut off.
To stop the recording in the middle of the tape, press the ■ button.

Note
When recording is made near a television set or a color monitor, interference from the television set or color monitor may affect the recording results and the Dolby NR system may not activate properly. In this case, turn off the television set or color monitor, or move the television set or color monitor away from the tape deck and make recording once again.

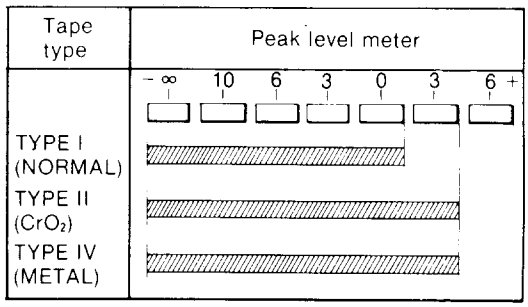
MORE ACCURATE RECORDING STARTS

You can use the PAUSE button to start recording more accurately than is possible when recording is started by pressing both the ● button and the ▷ button.
1 After completing step 5 above, press the PAUSE button.
2 Hold the ● button down and press the ▷ button.
3 Adjust the recording level.
4 At the moment you wish to start recording, you need only press the PAUSE button again.

RECORDING LEVEL ADJUSTMENT

If the recording level setting is too high, the recording will be distorted and if the setting is too low, there will be a hissing sound in the tape. Adjust the recording level as high as possible while still avoiding distortion.
The following table indicates the points at which to set the recording level for various kinds of tape.

Recommended maximum peak level meter reading



Note that the readings show the highest level at a given moment. When the meters deflect continuously over the readings, the recording level is too high and distortion will occur.
Since the saturation level of any tape is lower in the higher frequencies than in the lower frequencies, the recording level may still be too high if adjusted in this way if the program to be recorded contains many high frequency signals such as digital source programs. Consideration has to be given to the program source to be recorded as well as to the characteristics of the cassette to be used, since each cassette, even cassettes using the same type of tape, may have different characteristics.

RECORD MUTING

By pressing the ○ button during recording, four seconds interspacing is provided automatically, eliminating unwanted program material such as broadcasting commercials. While the record muting is operating, the incoming signal is not recorded on the tape but it continues to register on the meters and feed to the monitor so that you know exactly what is going on.

1 Press the ○ button when the segment you do not want to record begins. The indicator of the PAUSE button will blink.
A blank is made while the tape continues to run and the tape path pauses automatically after four seconds.
The indicator of the PAUSE button will light.
2 When you want to resume recording, press the PAUSE button.
The indicator of the PAUSE button will go off.

To insert a blank less than four seconds long
Press the ○ button to mute recording. Press the PAUSE button when you want to resume recording.

To insert a blank over four seconds long
Hold down the ○ button for as long as you want the blank segment on the tape to be. After 4 seconds, the indicator of the PAUSE button will blink more rapidly. When you release the ○ button, the tape deck will be in the pause mode. When you want to resume recording, press the PAUSE button to release the pause mode.

TO RECORD MATERIAL ONTO A SPECIFIC PORTION OF TAPE

When you want to re-record a specific portion of tape or to insert new material between two points on a tape, you will find it handy to be able to change directly from the playback to the record mode by pressing the ● button while holding the ▷ button down.

TAPE DUBBING (from deck A to deck B)

The sound played back on deck A can be recorded on deck B. During dubbing it is not necessary to set the DOLBY NR switch.
To monitor the tape sound recorded using the Dolby NR system, select the appropriate Dolby NR system.

1 Depress the POWER switch.
2 Press the ⏏ button of deck A and insert a recorded cassette with the side to be recorded towards you.
3 Press the ⏏ button of deck B and insert a blank cassette.
4 **For normal speed dubbing**, press the NORMAL SPEED button.
For high-speed dubbing, press the HIGH SPEED button.
Dubbing starts and you can monitor the sound of deck A.

To stop dubbing, press the ■ button of either deck A or deck B.

Notes
- When either deck is automatically shut off during dubbing, the other deck also shuts off even if the tape remains in the other deck.
- During high-speed dubbing, the sound is sometimes deteriorated by a television set. When this happens, move the television set away from the unit.

Notes on remote control operation with the optional Sony system control tuner or receiver
- Only deck B can be controlled by the remote commander. Be sure to insert a cassette in deck B.
- Remote control operation cannot be made during tape dubbing.

MAINTENANCE

Cleaning of heads and tape path
We recommend cleaning after every 10 hours of operation. To make the best possible recordings, however, you should clean all surfaces over which the tape travels before every recording.

1 Press the ⏏ button to open the cassette holder. Remove the window.
See Fig. D.
2 Wipe the heads, the pinch roller and the capstan with a cleaning tip slightly moistened with cleaning fluid or alcohol.
The illustration shows deck B.
See Fig. E.
3 Replace the window.
See Fig. F.

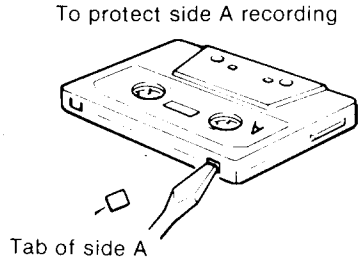
After cleaning the heads and tape path, do not insert a cassette until the areas cleaned are completely dry.

Demagnetizing heads
After 20 to 30 hours of use, enough residual magnetism will have built up on the heads to begin to cause loss of high frequencies and hiss. At this time you may need to demagnetize the heads and all metal parts in the tape path with a commercially available head demagnetizer. Be sure that the tape deck is turned off while you demagnetize.

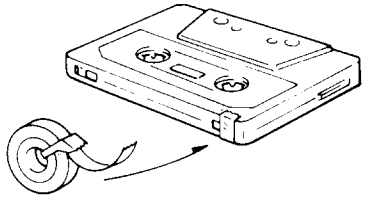
Cleaning the cabinet
Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

NOTES ON CASSETTES

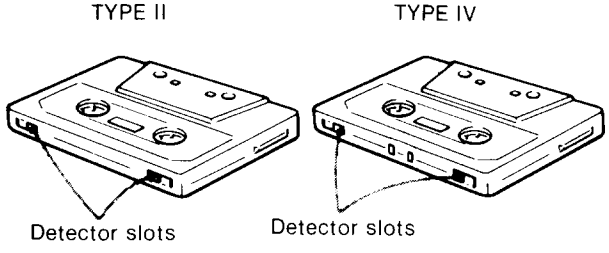
To protect cassettes from accidental erasure
Remove the tab as illustrated so that the record mode does not function when the record button is pressed.



To record on a cassette once tabs have been removed, simply cover the slot with plastic tape.



Be careful not to cover the detector slots of the TYPE II (CrO_2 tape) and TYPE IV (metal tape) cassettes. If the slots are covered, the automatic tape select system does not operate correctly.



Cassette care
- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- The use of a 120-minute cassette tape is not recommended. Frequent switching of the tape operation mode can result in the tape becoming entangled because this very thin tape can easily be stretched.
- Keep cassettes away from equipment with magnets, such as speakers and amplifiers, because their magnets could cause erasures or distortions of your recorded tapes.
- Protect cassettes from dust by storing them in their cases. Even minor dirt or dust could contaminate the heads, resulting in noise and sound drop-outs.
- Do not expose cassettes to direct sunlight, extremely cold temperature or moisture.

SPECIFICATIONS

Recording system
4-track 2-channel stereo
Fast-forward and rewind time
Approx. 90 sec. (with C-60 cassette)
Bias frequency 105 kHz
Signal-to-noise ratio (NAB, at peak level)

Cassette / DOLBY NR switch	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UCX)	57 dB	64 dB	70 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion
1.0% (with Sony METAL-ES cassette)
Frequency response
DOLBY NR OFF
• With TYPE IV cassette (Sony METAL-ES)
20 - 16,000 Hz
30 - 15,000 Hz (±3 dB)
30 - 13,000 Hz (±3 dB, 0 VU recording)
• With TYPE II cassette (Sony UCX)
20 - 15,000 Hz
30 - 14,000 Hz (±3 dB)
• With TYPE I cassette (Sony HF-S)
20 - 14,000 Hz
30 - 13,000 Hz (±3 dB)
Wow and flutter 0.06% WRMS (NAB)
Inputs Line inputs (phono jacks)
Sensitivity 77.5 mV (−20 dB)
Input impedance 47 kilohms
Outputs Line outputs (phono jacks)
Output level 0.44 V (−5 dB) at load impedance 47 kilohms
Load impedance over 10 kilohms
Headphone output (stereo phone jack)
Output level −28 dB at load impedance of 8 ohms

General
Power requirements
120 V ac, 60 Hz
Power consumption
24 watts
Dimensions Approx. 430 × 105 × 275 mm (w/h/d)
(17 × 4 1/4 × 10 7/8 inches)
including projecting parts and controls
Weight Approx. 4.9 kg (10 lbs 13 oz)
Supplied accessories
Connecting cord (2)
Remote control cord (1)

Design and specifications subject to change without notice.

TROUBLE CHECKS

The following trouble checks will help you correct the most common problems encountered with a tape deck. Should any problem persist after you have made these checks, consult your nearest Sony service facility.
Before proceeding with these trouble checks, first check these basic points:
- The power cord must be firmly connected.
- Amplifier connections must be firmly made.
- Heads, capstans and pinch rollers should be clean.
- The amplifier controls and switches should be set correctly.

FUNCTION BUTTONS AND TAPE TRANSPORT PROBLEMS

The function buttons do not activate.
- The cassette holder is not fully closed.
- The cassette is incorrectly inserted into the cassette holder.
- No cassette in the holder.

The ● button does not activate.
- The tab has been removed from the cassette.

The automatic shut-off mechanism activates before the end of the tape.
- The tape is slack.
- This situation may also be caused by a deformed cassette shell.

Tape transport noise seems excessively loud in rewind or fast-forward mode.
- This situation depends upon the cassette used and is not a problem.

RECORDING AND PLAYBACK PROBLEMS

Recording or playback cannot be made or there is a decrease in sound level.
- Contamination or magnetic build-up on the playback head (deck A) or record/playback head (deck B).
- Improper connection.
- Improper setting of the amplifier controls.

Excessive wow or flutter or drop out
- Contamination of the capstan or pinch roller.

Incomplete erasure
- Contamination of the erase head.

Increase of noise or erasure of high frequencies
- Magnetic build-up on the head.

Unbalanced tone in higher frequencies

- Improper setting of the DOLBY NR switch. When playing back, set the switch to the same position used in recording.
- The Dolby NR system sometimes malfunctions due to interference from a nearby television set or monitor. Move the television set or monitor away from the unit.
- Improper setting of the TAPE buttons during playback on deck B. If recorded with the wrong button pressed, adjust the tone controls of the amplifier in playback.

NOISE

Hum noise

- The tape deck is stacked on or under the amplifier. Separate the units.

White noise during playback with DOLBY NR ON.
Low-frequency noise during recording.
High-frequency noise during high speed dubbing.

- In the above cases, move the television set or monitor away from the unit.

Sony Corporation Printed in Japan

3-760-605-22 (1)